REMARKS

Claims 6-28 are pending in the present application. After entry of the above amendments, Claims 6, 11, 16-21, and 26 have been amended. Applicants believe that the present application is now in condition for allowance, which prompt and favorable action is respectfully requested.

Claims 7-10, 12-15, 19-20, 22-24, and 26-28 are objected to for various informalities. Claims 11-24 are also rejected under 35 U.S.C. § 112, second paragraph, as being indefinite. Claims 6, 11, 16-18 and 21 have been amended to correct the informalities and accordingly, it is respectfully requested that objections and § 112, second paragraph rejection be withdrawn.

Claims 11-20 are also rejected under 35 U.S.C. § 112, first paragraph, as containing new matter. Applicant respectfully traverses the rejection. The amended claim 11 limitation, "means for receiving said second packet and for modulating said overflow packet in accordance with a second orthogonal code sequence of said plurality of orthogonal code sequences and having a second output for providing said orthogonal code modulated overflow packet", draws support from, among other places, paragraph 0049 of the specification. In paragraph 0049, the specification discusses use of a traffic despreader and an overflow despreader having different PN codes and set apart temporally, meaning that the traffic PN sequences and the overflow PN sequences are unique from one another. Thus, the claim 11 limitation recited above is supported.

Similarly, the amended claim 16 and claim 21 limitation, "a second modulator having an input for receiving said second packet and for modulating said traffic packet in accordance with a second orthogonal code sequence of said plurality of orthogonal code sequences and having a second output for providing said orthogonal code modulated traffic packet", is supported by the specification. Specifically, paragraph 0049 discusses the use of PN generators for traffic and overflow channels to generate pseudorandom noise codes. When system usage rises such that the system may no longer accommodate unique overflow channels, the same Walsh sequence may be used for both traffic and

overflow communications (see paragraph 0054). Thus, the claim 16 limitation recited above is supported.

Claims 6-10, 11, and 21 are rejected under 35 U.S.C. § 101 as claiming the same invention as 1-5, and 11 of US Patent 5,777,990. Claims 25-28 are rejected under 35 U.S.C. § 101 as claiming the same invention as claims 1-2, and 6-7 of US Patent 6,292,476. (Please note the Office Action recites patent number 6,292,471, which is unrelated. Applicant assumes this is a typographical error.) This rejection is respectfully traversed. Although the '990 patent have claims of similar scope, the '990 patent recites claims in a "means plus function" format. However, claims 6-10, 11 and 21 recite claims with structural limitations. Similarly, the '476 patent recites claims in "means plus function" format. However, claims 25-28 recite various structural limitations. Accordingly, it is respectfully requested that the 35. U.S.C. § 101 rejection be withdrawn.

Claims 12-15, 16-20 and 22-24 are rejected over the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 2-5 of U.S. patent 5, 777,990. Assuming these claims are otherwise allowable, Applicant would consider timely filing of a terminal disclaimer.

VERSION WITH MARKINGS TO SHOW CHANGES MADE

6.   (Amended)   In code division multiple access (CDMA) communication system, wherein packets of data are transmitted using a plurality of orthogonal code sequences and wherein each user of said code division multiple is allocated an orthogonal code sequence for communication on a traffic channel for transmitting variable rate packets of data symbols, an apparatus comprising:

a channel packetizer for receiving said variable rate packets and, when a number of said data symbols included in ones of said variable rate packets exceeds a threshold value for splitting each of said ones of said variable rate packets into a traffic packet and at least one overflow packet;

a first modulator for receiving said traffic packet and for modulating said traffic packet in accordance with said orthogonal code sequence of said plurality of orthogonal code sequences and for modulating said orthogonal modulated traffic packet in accordance with a first pseudorandom noise (PN) sequence;

a second modulator for receiving said at least one overflow packet and for modulating said at least one overflow packet in accordance with an orthogonal code sequence of said plurality of orthogonal code sequences and for modulating said at least one orthogonal modulated overflow packet in accordance with at least one additional pseudorandom noise (PN) sequence wherein said at least one additional PN sequence is nonorthogonal to said first PN sequence; and

a transmitter for transmitting said traffic packet on said traffic channel and for transmitting at least one overflow packet on said at least one overflow channel.

11.   (Amended) An apparatus [A system] for transmitting variable rate packets of data symbols comprising;

means for receiving said variable rate packets and for dividing each of said variable rate packets including more than a threshold number of said data symbols into a traffic packet and into an overflow packet, each said traffic packet being provided to a

first packetizer output and each said overflow packet being provided to a second packetizer output;

means for receiving said traffic packet and for modulating said traffic packet in accordance with said orthogonal code sequence of a plurality of orthogonal code sequences and having a first output for providing said orthogonal code sequence modulated traffic packet;

means for receiving said orthogonal code modulated traffic packet and for modulating said orthogonal code modulated traffic packet in accordance with a first PN sequence;

means for receiving said overflow [second] packet and for modulating said overflow[traffic packet] in accordance with a second orthogonal code sequence of said plurality of orthogonal code sequences and having a second [first] output for providing said orthogonal code modulated overflow [traffic] packet;

means for receiving said orthogonal code modulated overflow packet and for modulating said orthogonal code modulated overflow packet in accordance with a second PN sequence which is non-orthogonal to said first PN sequence; and

a transmitter means having a first input coupled to said first modulator output and having a second input coupled to said second modulator output, said transmitter further having an output.

16.   (Amended)   An apparatus [A method] for transmitting variable rate packets of data symbols comprising;

a channel packetizer having an input for receiving said variable rate packets and for dividing each of said variable rate packets including more than a threshold number of said data symbols into a traffic packet and into an overflow packet, each said traffic packet being provided to a first packetizer output and each said overflow packet being provided to a second packetizer output;

a first modulator having an input for receiving said traffic packet and for modulating said traffic packet in accordance with said orthogonal code sequence of a

plurality of orthogonal code sequences and having a first output for providing said orthogonal code sequence modulated traffic packet;

a first PN modulator having an input for receiving said orthogonal code modulated traffic packet and for modulating said orthogonal code modulated traffic packet in accordance with a first PN sequence;

a second modulator having an input for receiving said second packet and for modulating said traffic packet in accordance with a second orthogonal code sequence of said plurality of orthogonal code sequences and having a second[first] output for providing said orthogonal code modulated traffic packet;

a second PN modulator having an input for receiving said orthogonal code modulated overflow packet and for modulating said orthogonal code modulated overflow packet in accordance with a second PN sequence which is non-orthogonal to said first PN sequence; and

a transmitter having a first input coupled to said first modulator output and having a second input coupled to said second modulator output, said transmitter further having an output.

17.   (Amended) The apparatus [method] of Claim 16 wherein the first PN modulator and the second PN modulator[receiving said variable rate packets] is responsive to a rate signal.

18.   (Amended) The apparatus [method] of Claim 16 further comprising a receiver for receiving speech samples and a compressor for compressing said speech samples in accordance with a variable rate vocoder format to provide said variable rate packets.

19.   (Amended) The apparatus of Claim 18 further comprising an [means for] error correction coder for coding said variable rate packets.

20.   (Amended) The apparatus of Claim 16 further comprising an interleaver [means] for interleaving said variable rate packets.

21.   (Amended) An apparatus [A system] for transmitting variable rate packets of data symbols comprising: [;]

a channel packetizer having an input for receiving said variable rate packets and for dividing each of said variable rate packets including more than a threshold number of said data symbols into a traffic packet and into an overflow packet, each said traffic packet being provided to a first packetizer output and each said overflow packet being provided to a second packetizer output, said channel packetizer responsive to a rate signal;

a first modulator having an input for receiving said traffic packet and for modulating said traffic packet in accordance with said orthogonal code sequence of a plurality of orthogonal code sequences and having a first output for providing said orthogonal code sequence modulated traffic packet;

a first PN modulator having an input for receiving said orthogonal code modulated traffic packet and for modulating said orthogonal code modulated traffic packet in accordance with a first PN sequence;

a second modulator having an input for receiving said overflow [second] packet and for modulating said overflow [traffic] packet in accordance with a second orthogonal code sequence of said plurality of orthogonal code sequences and having a second[first] output for providing said orthogonal code modulated overflow [traffic] packet;

a second PN modulator having an input for receiving said orthogonal code modulated overflow packet and for modulating said orthogonal code modulated overflow packet in accordance with a second PN sequence which is non-orthogonal to said first PN sequence; and

a transmitter having a first input coupled to said first modulator output and having a second input coupled to said second modulator output, said transmitter further having an output.

26.   The apparatus of Claim 25, wherein said traffic demodulator [means] further comprises:

an orthogonal traffic sequence generator for generating a traffic sequence; and

an orthogonal traffic despreader for receiving said demodulated traffic packet and despreading said demodulated traffic packet using said traffic sequence,

wherein said overflow demodulator further comprises:

an orthogonal overflow sequence generator for generating an overflow sequence; and

an orthogonal overflow despreader for receiving said demodulated overflow packet and despreading said demodulated overflow packet using said overflow sequence.

CONCLUSION

In light of the amendments contained herein, Applicants submit that the application is in condition for allowance, for which early action is requested.

Please charge any fees or overpayments that may be due with this response to Deposit Account No. 17-0026.

Respectfully submitted,

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